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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,826	04/26/2000	William L. Cooper	10265.104646	1686

7590 05/18/2004

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EXAMINER	
PHILPOTT, JUSTIN M	

ART UNIT	PAPER NUMBER
2665	5

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/558,826	Applicant(s) COOPER ET AL.	
	Examiner Justin M Philpott	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22-27* is/are allowed.

6)☒ Claim(s) *1-21,28,29 and 33-38* is/are rejected.

7)☒ Claim(s) *30-32 and 39-41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed March 29, 2004 have been fully considered but they are not persuasive.

2. Regarding Rakib, first, applicant argues with respect to claim 1 (page 11, part F, first and second paragraphs) that Rakib does not teach placing each transmitter into a silent mode and then ranging selected transmitters. However, as discussed in the previous office action, and repeated herein, Rakib teaches placing each of the plurality of transmitters into a silent mode (e.g., reaching step 198 wherein RUs will not be requested for additional transmissions as in the synchronization step of 204, see FIGS. 7A-7C and 8), and ranging selected transmitters of the plurality of transmitters (e.g., fine tuning mode, performed in step 202 for a first selected RU and repeated for remaining selected RUs thereafter). Thus, applicant's argument is not persuasive.

Further, applicant argues that Rakib does not perform the wide-mode marshalling as described in applicant's specification on page 15, lines 2-5. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., performing the wide-mode marshalling as described in applicant's specification on page 15, lines 2-5) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

Second, applicant argues (page 11, part F, third paragraph) that the process of Rakib is not the same as the ranging process described in applicant's specification on page 12, lines 3-6. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., performing the ranging process described in applicant's specification on page 12, lines 3-6) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

Third, applicant argues (part F, page 11, fourth paragraph to page 12, first paragraph) that Rakib does not teach that a signal sent in response to a ping signal is sent in a frame header wherein the placement in the header of the return signal will be different than the location within the header that a central unit expects it to be if a remote unit was synchronized correctly, and wherein a central unit sends a message instructing a remote transmitting unit to adjust the timing of further transmissions based on a measured delay amount when the placement in the header differs from the expected location. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a signal sent in response to a ping signal is sent in a frame header wherein the placement in the header of the return signal will be different than the location within the header that a central unit expects it to be if a remote unit was synchronized correctly, and wherein a central unit sends a message instructing a remote transmitting unit to adjust the timing of further transmissions based on a measured delay amount when the placement in the header differs from the expected location) are not recited in the rejected claim(s). Although the claims

are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

Fourth, applicant argues (part F, page 12, second paragraph) that Rakib does not teach measuring the propagation delay of a transmitter and adjusting the transmitter by the measured propagation delay as recited in claim 2. However, as discussed in the previous office action, and repeated herein, Rakib teaches measuring the propagation delay associated with receiving the signal from the particular transmitter (e.g., see step 242 of FIG. 8); and adjusting the particular transmitter by the propagation delay for all future transmissions (e.g., see step 244). Thus, applicant's argument is not persuasive.

Further, applicant argues that Rakib does not teach requesting the particular transmitter to transmit all further information at a time adjusted by the value of the difference between t_1 and t_0. However, as discussed in the previous office action, and repeated herein, Rakib teaches requesting the particular transmitter to transmit all further information at a time adjusted by the value of the difference between t_1 (e.g., actual time of arrival) and t_0 (e.g., the predicted time of arrival) (e.g., see col. 20, lines 34-49). Thus, applicant's argument is not persuasive.

3. Regarding Geile, first applicant argues (page 12, part G, first and second paragraphs) that while applicant admits that the transmitters in Geile are synchronized "only one at a time", Geile does not teach selecting one of the detected transmitters as a selected transmitter and attempting a range operation on the selected transmitter as recited in claim 7. However, as admitted by applicant, Geile clearly teaches selecting one transmitter at a time for synchronization. That is,

whether or not all transmitters are eventually selected, it remains undisputed that Geile selects one transmitter at a time to be synchronized. Further, as discussed in the previous office action, and repeated herein, Geile teaches selecting one of the detected transmitters as a selected transmitter, and attempting a range operation (e.g., during T_{SCAN}) on the selected transmitter (e.g., see col. 63, lines 24-26 wherein one selected ISU is initialized and activated at one time). Thus, applicant's argument is not persuasive and Geile clearly teaches the limitations recited in claim 7.

Second, applicant argues (page 12, part G, third paragraph) that Geile does not teach wide-mode marshalling or disabling wide-mode marshalling if a range operation fails as recited in claim 13. However, as discussed in the previous office action, and repeated herein, Geile teaches a controller operative to: enable wide-mode marshaling by disabling particular transmitters of the plurality of transmitters from transmitting, select one of the detected transmitters as a selected transmitter, and attempt a range operation (e.g., during T_{SCAN}) on the selected transmitter (e.g., see col. 63, lines 24-26 wherein one selected ISU is initialized and activated at one time), wherein if the transmitter does not respond it is inherent that the range operation has failed; and (e) if the range operation fails, disable wide-mode marshaling by enabling each of the particular transmitters to resume transmitting (e.g., see col. 63, line 18 – col. 67, line 38 and FIGS. 47 and 48, wherein upon a range operation failing, transmission is resumed in a different sub-band or channel). Thus, applicant's argument is not persuasive.

Third, applicant argues (page 13, first and second paragraphs) that because Geile teaches if synchronization is not obtained using a particular channel then synchronization with another channel is attempted, Geile does not teach disabling wide-mode marshalling as recited in claim

13. However, as discussed in the previous office action, and repeated herein, Geile enables wide-mode marshaling by disabling particular transmitters of the plurality of transmitters from transmitting and attempting a range operation (e.g., during T_{SCAN}) on a selected transmitter (e.g., see col. 63, lines 24-26 wherein one selected ISU is initialized and activated at one time). Thus, disabling the marshalling implicitly entails enabling the particular transmitters to resume transmitting. Geile teaches such a step of disabling the marshaling by enabling each of the particular transmitters to resume transmitting (e.g., see col. 63, line 18 – col. 67, line 38 and FIGS. 47 and 48, wherein upon a range operation failing, transmission is resumed in a different sub-band or channel, whereafter Geile turns off the ranging tone if a range operation fails, e.g., see col. 66, lines 32-34 regarding reporting a hard failure). Thus, applicant's argument is not persuasive.

Fourth, applicant argues with respect to claim 9 (page 13, third paragraph) that while Geile teaches ranging is performed by one transmitter at a time, the other transmitters not actively ranging are not placed in a disabled state. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., placing transmitters in a particular disabled state) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot. Further, if applicant has intended to argue that Geile does not teach the other transmitters not actively ranging are disabled (i.e., rather than being placed in a unique "disabled state" which is not recited in the claims), Geile clearly teaches these other transmitters are disabled by disclosing

that the transmitters are not actively ranging (e.g., see col. 63, lines 24-26 wherein one selected ISU is initialized and activated at one time).

Fifth, applicant argues with respect to claims 28, 33 and 37 (page 13, fourth paragraph) that Geile does not teach a multiple threshold approach wherein a number of remote units that fail to synchronize are designated as a failed set and the number of failed units is compared to a predetermined threshold upon which a recovery operation is based. However, as discussed in the previous office action, and repeated herein, Geile teaches identifying a failed set of transmitters (e.g., wherein each of a plurality of ISUs are synchronized via the steps of FIGS. 47 and 48) that are not transmitting in synchronization (e.g., which are initially identified by detecting a communication loss between a large number of ISUs, see col. 63, lines 18-28); if the number of transmitters in the failed set of transmitters exceeds a first integrity threshold (e.g., comprising indication noted in col. 63, lines 18-28 and further indicated by failure 3915, wherein the failure of one ISU among the set of ISUs to be synchronized indicates the threshold), perform a first recovery process (e.g., comprising retuning to a secondary tone, see col. 65, lines 33-35), and, if the first recovery process aborts and the number of transmitters in the failed set of transmitters is greater than a second threshold (e.g., if synchronization to the secondary tone fails, see col. 65, line 36, wherein the failure of one ISU among the set of ISUs to be synchronized indicates the threshold), perform a second recovery process (e.g., tune to the center of the next band in table 3912, see col. 65, lines 37-38); and if the number of transmitters in the failed set of transmitters exceeds a third integrity threshold (e.g., if all bands have been tried, see col. 65, line 39, wherein the failure of one ISU among the set of ISUs to be synchronized indicates the threshold), perform a third recovery process (e.g., cycles through bands again, see col. 65, lines 39-40). That is a

remote unit identified as a failed unit may comprise a failed set, and a first, second and third threshold may comprise a failed set having a single remote unit. Thus, applicant's argument is not persuasive.

Sixth, applicant argues with respect to claims 29, 34-36 and 38 (page 13, fifth paragraph to page 14, first paragraph) that Geile does not disclose a central controller causes a remote transmitter to cease transmitting during the wide-mode marshalling process. First, however, the claims do not recite ceasing transmission during the wide-mode marshalling process. Rather, the claims recite "if the range attempt fails on the ranging transmitter, abort the current recovery process". Thus, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a central controller causing a remote transmitter to cease transmitting during the wide-mode marshalling process) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Second, as discussed in the previous office action, and repeated herein, Geile teaches if the range operation fails, selecting a next transmitter from the failed set of transmitters as the ranging transmitter (e.g., see col. 65, line 47 regarding searching for a new ISU) or disabling wide-mode marshaling by enabling each of the particular transmitters to resume transmitting (e.g., see col. 63, line 18 – col. 67, line 38 and FIGS. 47 and 48, wherein upon a range operation failing, transmission is resumed in a different sub-band or channel, whereafter Geile turns off the ranging tone if a range operation fails, e.g., see col. 66, lines 32-34 regarding reporting a hard failure). That is, if the range

operation fails, Geile teaches aborting the current recovery process by selecting a next transmitter. Thus, applicant's argument is not persuasive.

4. Regarding the combined teachings of Rakib and Geile, applicant argues (part H, pages 14-15) that Rakib and Geile, either alone or in combination, do not teach all of the limitations of applicant's claims for reasons discussed individually with respect to Rakib and Geile. However, as discussed above, Rakib and/or Geile teach all of the limitations of applicant's claims. Thus, applicant's argument is not persuasive.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,768,269 to Rakib et al.

Regarding claims 1 and 4, Rakib teaches a method for synchronizing a plurality of transmitters within a network (e.g., see col. 17, line 9 – col. 21, line 20), the method comprising the steps of: placing each of the plurality of transmitters into a silent mode (e.g., reaching step 198 wherein RUs will not be requested for additional transmissions as in the synchronization

step of 204, see FIGS. 7A-7C and 8); ranging selected transmitters of the plurality of transmitters (e.g., fine tuning mode, performed in step 202 for a first selected RU and repeated for remaining selected RUs thereafter); and removing each of the plurality of transmitters from the silent mode and resuming normal operation (e.g., see col. 21, lines 14-20 wherein each of the plurality of RUs are aligned by repeating the process of FIGS. 7A-7C).

Regarding claims 2 and 5, Rakib teaches requesting a particular transmitter (e.g., RU) of the selected transmitters to transmit a signal (e.g., see col. 20, lines 25-33); measuring the propagation delay associated with receiving the signal from the particular transmitter (e.g., see step 242 of FIG. 8); and adjusting the particular transmitter by the propagation delay for all future transmissions (e.g., see step 244).

Regarding claims 3 and 6, Rakib teaches the method discussed above regarding claims 2 and 5, and further teaches requesting the particular transmitter to transmit all further information at a time adjusted by the value of the difference between t_1 (e.g., actual time of arrival) and t_0 (e.g., the predicted time of arrival) (e.g., see col. 20, lines 34-49).

7. Claims 7-9, 13, 15, 17, 28, 29 and 33-38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,279,158 to Geile et al.

Regarding claims 7, 8, 13, 15 and 17, Geile teaches a controller operating within a communication network, the controller being communicatively coupleable to a plurality of transmitters through a communications path, the controller being operative to: (a) detect that at least one of the transmitters of the plurality of transmitters is not transmitting at an appropriate time (e.g., when a fiber is cut, see col. 63, lines 18-28); (b)-(d) enable wide-mode marshaling by

disabling particular transmitters of the plurality of transmitters from transmitting, select one of the detected transmitters as a selected transmitter, and attempt a range operation (e.g., during T_{SCAN}) on the selected transmitter (e.g., see col. 63, lines 24-26 wherein one selected ISU is initialized and activated at one time), wherein if the transmitter does not respond it is inherent that the range operation has failed; and (e) if the range operation fails, disable wide-mode marshaling by enabling each of the particular transmitters to resume transmitting (e.g., see col. 63, line 18 – col. 67, line 38 and FIGS. 47 and 48, wherein upon a range operation failing, transmission is resumed in a different sub-band or channel).

Further, regarding claims 8 and 13, Geile teaches if the controller's attempt at the range operation is successful and additional detected transmitters remain that the controller has not attempted the range operation on, the controller is further operative to: (f) select one of the detected transmitters as a next selected transmitter; and (g) repeat steps d and e with the next selected transmitter (e.g., see col. 63, lines 24-34 wherein each ISU performs the above-discussed initialization process).

Regarding claim 9, Geile teaches after successful range operation of all detected transmitters, the controller is further operative to enable each of the particular transmitters (e.g., ISUs) to resume transmitting (e.g., see col. 66, lines 56-59).

Regarding claim 28, 33 and 37, Geile teaches a communications network including a controller coupled to a plurality of transmitters via a communications path wherein the controller is operative to: assign each of the plurality of transmitters (e.g., ISU) to a particular time-slot (e.g., ISU1, see FIG. 19); perform a search loop (e.g., see FIGS. 47 and 48 and col. 63, line 18 – col. 67, line 13) on a first set of transmitters, the search loop allowing the controller to identify a

failed set of transmitters (e.g., wherein each of a plurality of ISUs are synchronized via the steps of FIGS. 47 and 48) that are not transmitting in synchronization (e.g., which are initially identified by detecting a communication loss between a large number of ISUs, see col. 63, lines 18-28); if the number of transmitters in the failed set of transmitters exceeds a first integrity threshold (e.g., comprising indication noted in col. 63, lines 18-28 and further indicated by failure 3915, wherein the failure of one ISU among the set of ISUs to be synchronized indicates the threshold), perform a first recovery process (e.g., comprising retuning to a secondary tone, see col. 65, lines 33-35) and, if the first recovery process aborts and the number of transmitters in the failed set of transmitters is greater than a second threshold (e.g., if synchronization to the secondary tone fails, see col. 65, line 36, wherein the failure of one ISU among the set of ISUs to be synchronized indicates the threshold), perform a second recovery process (e.g., tune to the center of the next band in table 3912, see col. 65, lines 37-38); and if the number of transmitters in the failed set of transmitters exceeds a third integrity threshold (e.g., if all bands have been tried, see col. 65, line 39, wherein the failure of one ISU among the set of ISUs to be synchronized indicates the threshold), perform a third recovery process (e.g., cycles through bands again, see col. 65, lines 39-40).

Regarding claims 29 and 38, Geile teaches the controller is operative to perform the first recovery process by: enabling wide-mode marshaling by disabling particular transmitters of the plurality of transmitters from transmitting, select one of the detected transmitters as a selected transmitter, and attempt a range operation (e.g., during T_{SCAN}) on the selected transmitter (e.g., see col. 63, lines 24-26 wherein one selected ISU is initialized and activated at one time), wherein if the range operation fails, selecting a next transmitter from the failed set of transmitters

as the ranging transmitter (e.g., see col. 65, line 47 regarding searching for a new ISU) or disabling wide-mode marshaling by enabling each of the particular transmitters to resume transmitting (e.g., see col. 63, line 18 – col. 67, line 38 and FIGS. 47 and 48, wherein upon a range operation failing, transmission is resumed in a different sub-band or channel).

Regarding claims 34-36, Geile teaches one selected ISU is initialized and activated at one time (e.g., see col. 63, lines 24-26), and accordingly, Geile teaches the second set comprising each of the plurality of transmitters are requested to stop transmitting at the time when the controller is operative to enable wide-mode marshaling.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 10-12, 14, 16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geile in view of Rakib.

Regarding claims 10 and 14, Geile teaches the controller of claims 7 and 13 as discussed above and further discusses time adjustment based on the propagation delay (e.g., see col. 58, lines 16-32), however, may not specifically disclose measuring the propagation delay of selected transmitters by identifying the time between time t_0 and time t_1.

As discussed above regarding claims 2 and 5, Rakib teaches requesting a particular transmitter (e.g., RU) of selected transmitters to transmit a signal (e.g., see col. 20, lines 25-33);

measuring the propagation delay associated with receiving the signal from the particular transmitter (e.g., see step 242 of FIG. 8); and adjusting the particular transmitter by the propagation delay for all future transmissions (e.g., see step 244). Rakib further teaches requesting the particular transmitter to transmit all further information at a time adjusted by the value of the difference between t_1 (e.g., actual time of arrival) and t_0 (e.g., the predicted time of arrival) (e.g., see col. 20, lines 34-49). The teachings of Rakib provide improved ranging wherein receivers/transmitters are synchronized with enhanced spectral efficiency and without degradation of data by crosstalk interference (e.g., see col. 4, line 35 – col. 5, line 24). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Rakib to the system of Geile in order to provide improved ranging wherein receivers/transmitters are synchronized with enhanced spectral efficiency and without degradation of data by crosstalk interference.

Regarding claim 11, Geile teaches if the controller's attempt at the range operation is successful and additional detected transmitters remain that the controller has not attempted the range operation on, the controller is further operative to: (f) select one of the detected transmitters as a next selected transmitter; and (g) repeat steps d and e with the next selected transmitter (e.g., see col. 63, lines 24-34 wherein each ISU performs the above-discussed initialization process).

Regarding claims 12 and 16, Geile in view of Rakib teach the detection operation discussed above regarding claims 10 and 14, and further, Geile teaches at least one portion of the communication path includes redundant communication sub-paths (e.g., see col. 19, lines 13-39

regarding redundant downstream/upstream lines 24/26), and Examiner takes official notice that such sub-paths are known in the art to comprise different propagation delays.

Regarding claims 18-21, Geile teaches the controller of claim 13 as discussed above, however, may not specifically disclose enabling/disabling transmitters based upon the proximity of a TDMA frame of one channel with the header of a TDMA frame of another channel. Rakib teaches utilizing TDMA frames (e.g., see col. 12, lines 10-67), wherein a TDMA frame inherently comprises a header and other data portion and Rakib specifically teaches each frame (e.g., F_n in FIG. 4A) comprises a header portion in the form of a guardband (e.g., 61) and a multi-channel portion in the form of symbols (e.g., 62, 64 and 66) which carry information of the various channels (e.g., see col. 12, lines 61-62). Furthermore, Rakib teaches the controller is operative disable transmitters assigned to channels having frames in close proximity to header portions of other frames while enabling transmitters assigned to channels, or reassigning disabled transmitters to channels, having frames that are not in close proximity to header portions of other frames to remain transmitting (e.g., see col. 19, line 10 – col. 21, line 20 and FIGS. 7B-7C, particularly regarding step 204 and ending with step 222 wherein only one transmitter/RU operates within its own designated guardband portion). The teachings of Rakib provide improved ranging wherein receivers/transmitters are synchronized with enhanced spectral efficiency and without degradation of data by crosstalk interference (e.g., see col. 4, line 35 – col. 5, line 24). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Rakib to the system of Geile in order to provide improved ranging wherein receivers/transmitters are synchronized with enhanced spectral efficiency and without degradation of data by crosstalk interference.

Allowable Subject Matter

10. Claims 22-27 are allowed.

The following is an Examiner's statement of reasons for allowance: Claim 22 recites steps which were not found in a search of the prior art; the steps include: assigning a particular transmitter of a plurality of transmitters to a particular time-slot of a TDMA frame to facilitate communication between the particular transmitter and the controller; performing a search loop on a first set of transmitters of the plurality of transmitters wherein the operation of each of the first set of transmitters is verified; identifying each of the first set of transmitters that fail during the search loop as a failed transmitter; if the number of failed transmitters exceeds a first integrity threshold, disabling the transmission of a second set of the transmitters of the plurality of transmitters; performing a range attempt on a first failed transmitter; if the range attempt fails, enabling the transmission of the second set of transmitters; and if the range attempt succeeds, performing a range attempt on a next failed transmitter until a range attempt has been performed on each failed transmitter or the range attempt fails, and then enable the transmission of the second set of transmitters. Claims 23-27 are dependent upon claim 22 and include further limitations and are therefore allowed in view of the allowed claim 22.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

11. Claims 30-32 and 39-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the searched prior art does not disclose the second and third recovery processes as defined by claims 30-32 and 39-41 within a process defined by claims 28, 29, 37 and 38, upon which claims 30-32 and 39-41 depend.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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